

Climate Review for PR and USVI – October 2019



Synopsis: The month of October is typically characterized by heavy rain and a few significant rainfall events. However, that was not the case this year. October 2019 was dominated by locally induced showers and thunderstorms, mainly across the western portions of Puerto Rico, while most of the eastern half of Puerto Rico as well as the U.S. Virgin Islands ended the month with additional rainfall deficits and higher than normal mean temperatures. That said, the drought situation still managed to improve in some areas, but worsened in others.

Observed Conditions:

In the month of October, we observed higher than normal temperatures, locally induced showers and thunderstorms, and some haze due to Saharan dust. The warm to hot days are common for October, but we did observe much lower than normal rainfall across the eastern half of Puerto Rico and across the U. S. Virgin Islands, while higher than normal rainfall was observed across western Puerto Rico. That said, the below normal rainfall across the eastern half of Puerto Rico, added to the year-to date rainfall deficit, which is now estimated to be between 16 and 35 inches across portions of south, central and eastern interior of Puerto Rico as well as the western sections of the Luquillo Mountain Range. A couple of daily temperature records were tied in Saint Croix, but no other records (temperature or rainfall) were set or tied this month at any of our international airports.

The local drought conditions over Puerto Rico (Figure 1) improved from the previous month in the sense that there are currently no areas under the Moderate Drought (D1) category. However, eastern Puerto Rico now has been classified as Abnormally Dry (D0), making it a total of 30.63% of Puerto Rico's area under the D0 classification. The U.S. Virgin Islands received lower than normal rainfall, but only Saint Croix saw a change, going from no drought classification in the previous month to a Moderate Drought (D1) (Figure 2).

The departure from normal rainfall estimates this month ranged from around 10 inches above normal across western Puerto Rico to about 10 inches below normal across the Luquillo Mountain Range (Figure 3). In terms of percentage, we observed from 9% of normal rainfall across eastern and southern Puerto Rico to just over 250% of normal across western Puerto Rico. The total monthly rainfall estimates by the Doppler radar ranged from under an inch across eastern Saint Croix and portions of southern Puerto Rico, to just over 20 inches across portions of western Puerto Rico. (Figure 4).

All of the international airports in our local islands observed below normal rainfall, adding to the rainfall deficit (Table 1). In addition, all of the airports also observed above normal mean temperatures, but about a degree each (Table 2). However, only a couple of high temperature records were tied this month, both at the Saint Croix airport (Table 3). The overall highest temperature observed in October across any of our local COOP stations was 95°F at the Lajas AES station and the lowest temperature was 59°F at the Adjuntas AES station.

Looking Ahead:

The latest seasonal outlook issued by the Caribbean Climate Outlook Forum (CariCOF) favors near normal to above normal rainfall (Figure 5) and temperatures (Figure 6) for the next 3 months. ENSO-neutral conditions are expected to persist through the NDJ months, and possibly through FMM. ENSO-neutral conditions do not have a significant impact on seasonal temperature or rainfall forecasts, but it does add uncertainty. November is considered to be a wet month; any wet spells could bring some relief to the drought conditions. **More info:** <http://rcc.cimh.edu.bb/climate-outlooks/>

Figures and Tables

U.S. Drought Monitor Puerto Rico

November 5, 2019
(Released Thursday, Nov. 7, 2019)
Valid 7 a.m. EST

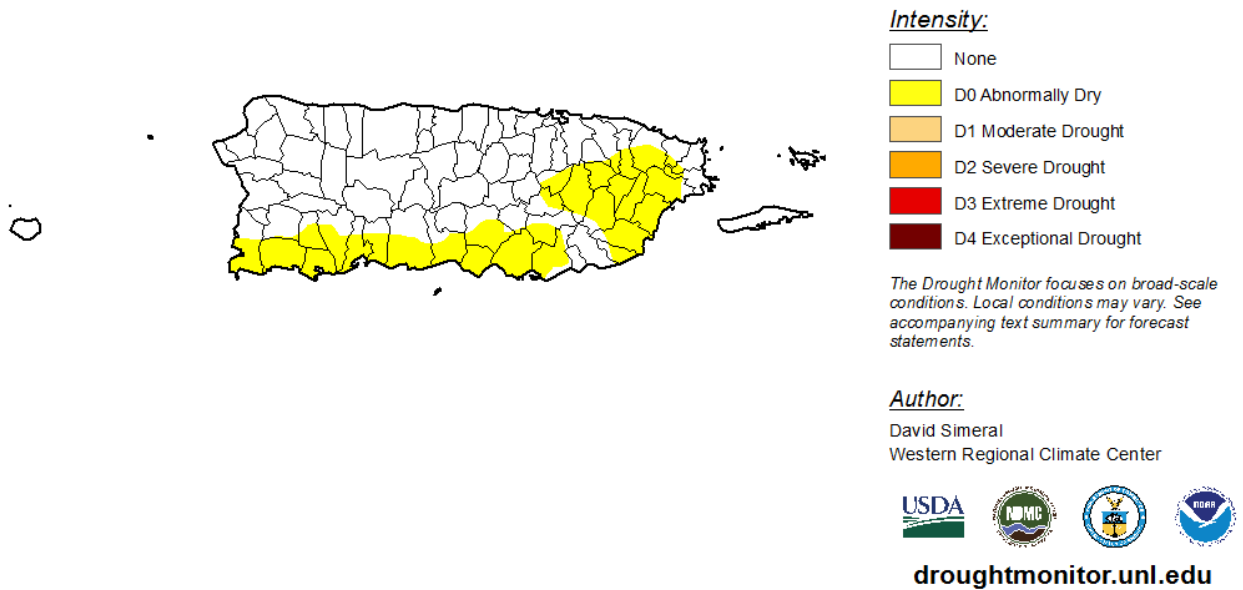


Figure 1. U.S. Drought Monitor for Puerto Rico. Released November 7, 2019.

U.S. Drought Monitor U.S. Virgin Islands

November 5, 2019
(Released Thursday, Nov. 7, 2019)
Valid 7 a.m. EST



Intensity:

- ⊗ No Data
- No Drought or Dryness
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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droughtmonitor.unl.edu

Figure 2. U.S. Drought Monitor for the US. Virgin Islands. Released November 7, 2019.

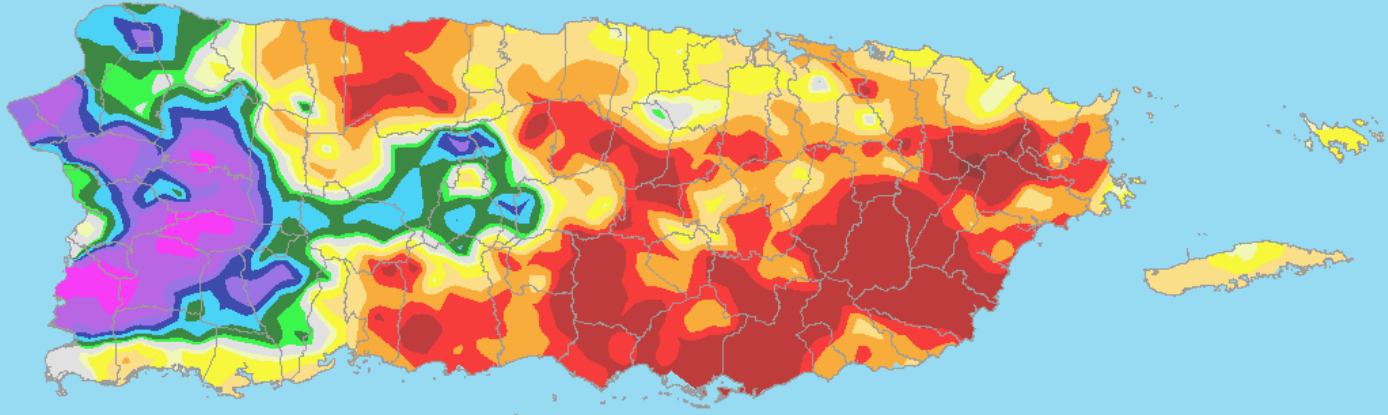


October 2019 Estimated Departure from Normal Rainfall
National Weather Service WFO San Juan
Data Source: AHPS*
Valid for October 1, 2019 to November 1, 2019
Data is Preliminary



*AHPS does not provide Departure from Normal data for the U.S. Virgin Islands at this time.

Puerto Rico



Departure from Normal (inches)

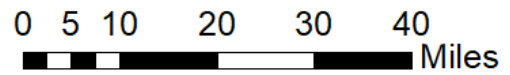
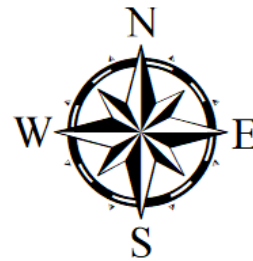
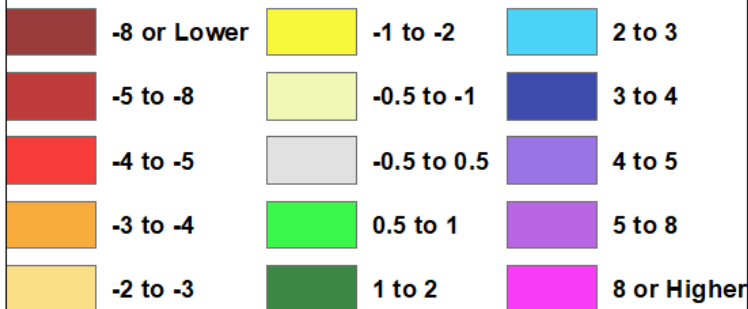


Figure 3. Departure from normal rainfall for the month of October 2019.



October 2019 Estimated Rainfall

National Weather Service WFO San Juan

Data Source: AHPS

Data is Preliminary

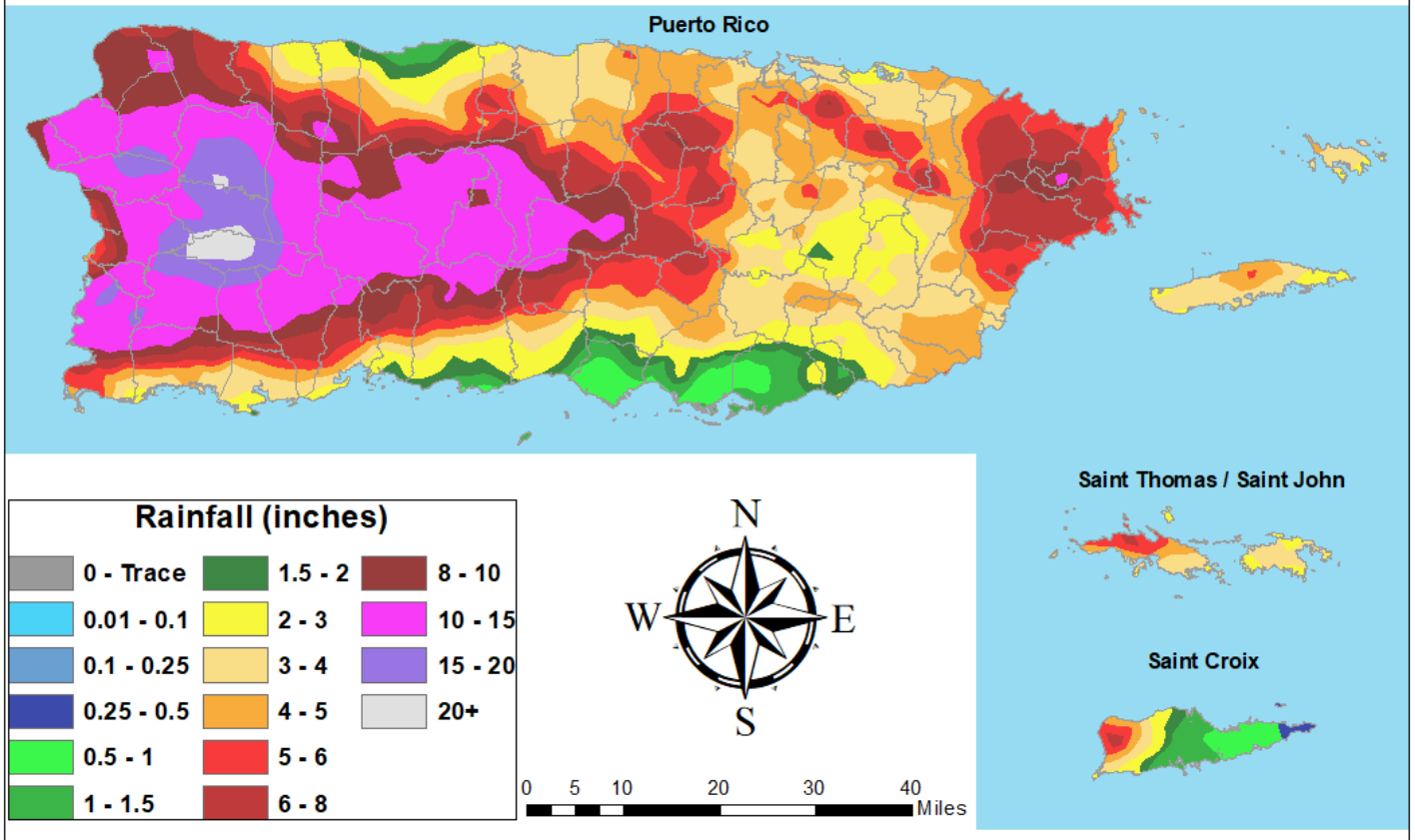


Figure 4. Total estimated rainfall for the month of October 2019.

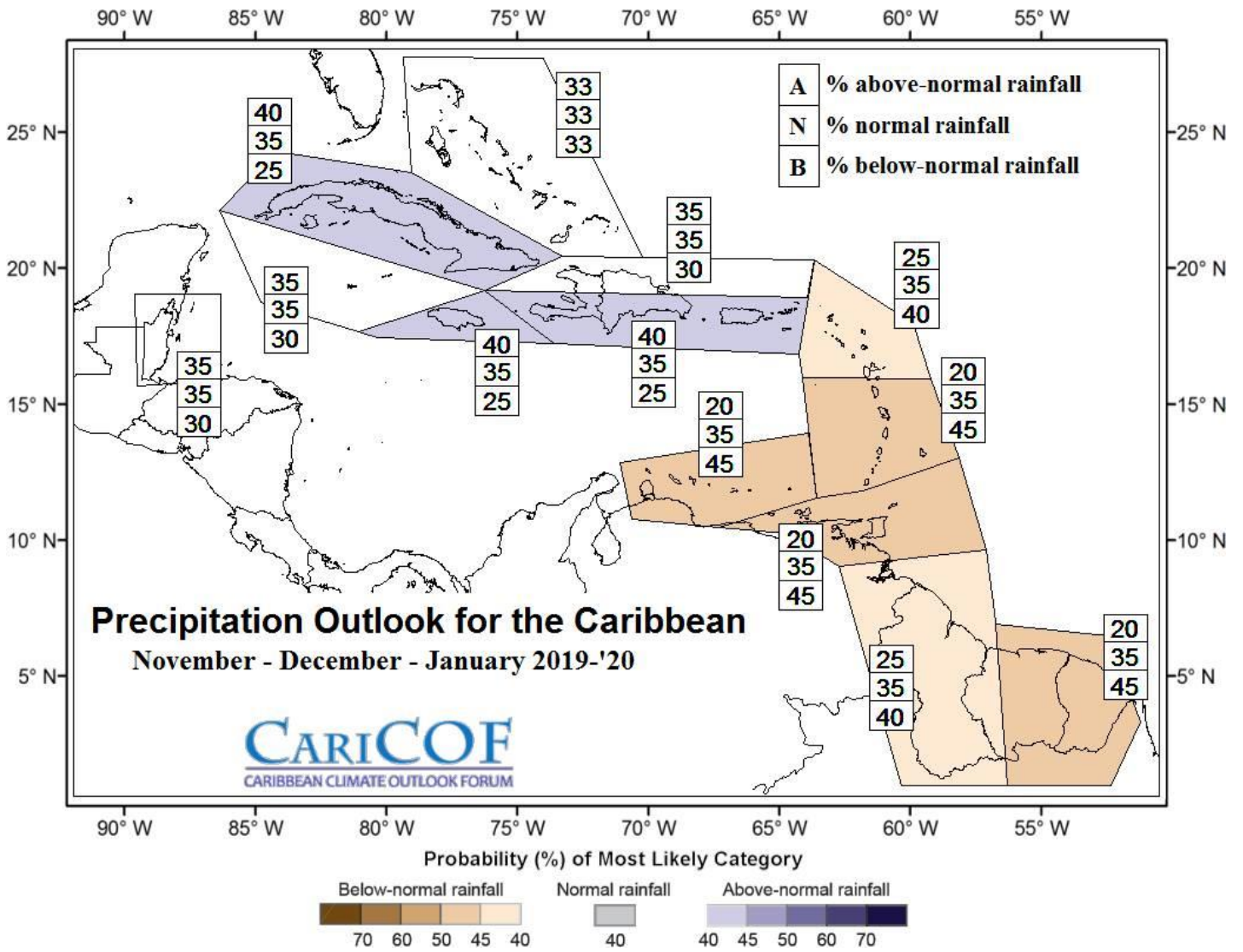


Figure 5. CariCOF 3-month rainfall forecast.

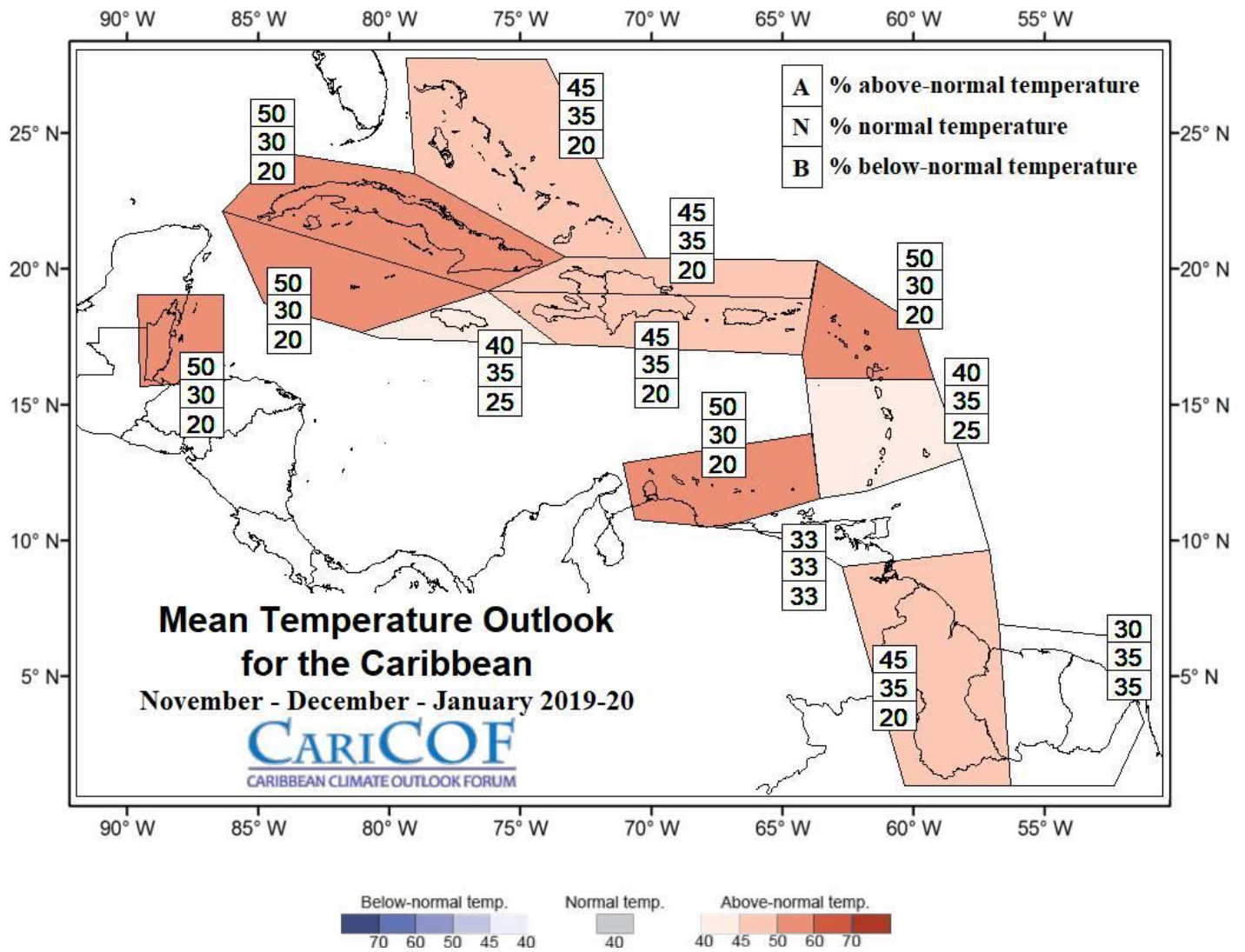


Figure 6. CariCOF 3-month temperature forecast.

| | Total Monthly Rainfall | Monthly departure from normal rainfall | Year-To-Date departure from normal rainfall. |
|------------|-------------------------------|---|---|
| JSJ | 2.82” | -2.77” | -8.19” |
| IST | 2.61” | -2.81” | -2.10” |
| ISX | 1.12” | -4.13” | -7.76”* |

Table 1. Rainfall highlights for the local international airports.

*Due to missing data, the Year-To-Date departure from normal rainfall for ISX does not include the months of January and February.

| | Max Temp (°F) | Min Temp (°F) | Mean Temp (°F) | Monthly departure from normal Mean Temp (°F) |
|------------|------------------------------|------------------------------|-----------------------|---|
| JSJ | 93 – Oct. 1 st | 76 – Oct. 23 rd | 83.6 | 1.0 |
| IST | 91 – Oct. 20 th * | 76 – Oct. 30 th * | 84.1 | 1.3 |
| ISX | 92 – Oct. 29 th * | 72 – Oct. 31 st * | 83.1 | 1.0 |

Table 2. Temperature highlights for the local international airports.

*Date of last occurrence. This temperature was observed in more than one day.

| | Records Set or Tied This Month | Previous Record and Year |
|------------|---|---------------------------------|
| JSJ | NONE | N/A |
| IST | NONE | N/A |
| ISX | Daily Max Temp. – Oct. 7 th – 92°F – Oct. 29 th – 92°F | 92°F – 1972 92°F - 1980 |

Table 3. Records that were set or tied in the month of October 2019